



- (51) **International Patent Classification:**
E01F 9/011 (2006.01) *E01F 13/12* (2006.01)
- (21) **International Application Number:**
PCT/GB2012/050176
- (22) **International Filing Date:**
27 January 2012 (27.01.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
1101514.6 28 January 2011 (28.01.2011) GB
- (71) **Applicant** (for all designated States except US): **ATG ACCESS LTD** [GB/GB]; Cobaco House North Florida Road, Haydock Industrial Estate, Haydock, Merseyside WA11 9TP (GB).
- (72) **Inventor; and**
- (75) **Inventor/Applicant** (for US only): **BALL, Robert Nicholas** [GB/GB]; 5 Mainwaring Road, Over Peover, Cheshire WA16 8TR (GB).
- (74) **Agents:** **FEARNSIDE, Andrew Simon et al.**; 15 Clare Road, Halifax, Yorkshire HX1 2HY (GB).
- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

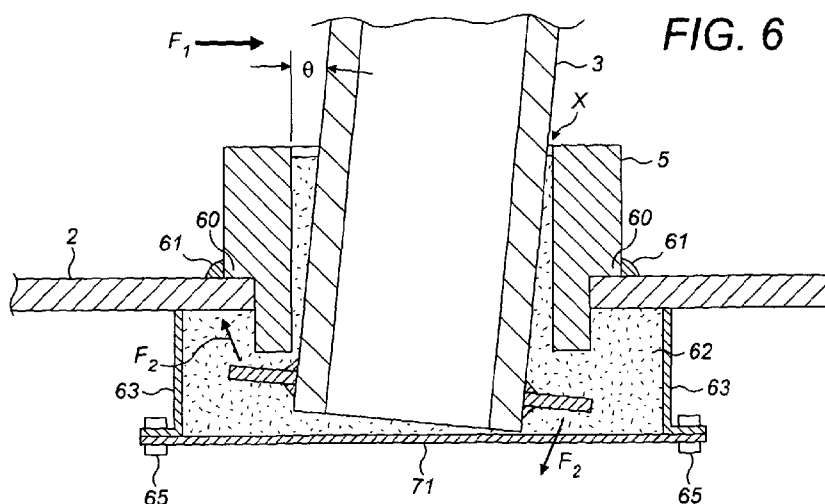
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) **Title:** BOLLARDS



(57) **Abstract:** A bollard apparatus for use as a fixed vehicle barrier including a bollard member having a base end and a foundation assembly adapted for fixed ground engagement. The foundation assembly comprises a housing part dimensioned and arranged for retaining the base end of the bollard member together with cementing material for cementing the bollard member to the foundation assembly within the housing part. The inclination of the bollard member relative to the foundation assembly is adjustable while the cementing material is not set (e.g. cured or hardened or rigid) and is fixed upon the cementing material becoming set thereby to cement the inclination of the bollard member relative to the foundation assembly.